DNBI Update

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18th MEDCOM Preventive Services Directorate

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18th MEDCOM
Preventive Services Directorate
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Cold Weather Injuries

Now that cooler weather is on the horizon, all providers are again reminded to report all cold weather injuries (CWIs) seen in their clinics. While the protection of soldiers against cold weather injuries is a command responsibility, Army Medical Department personnel must assist commanders in defining risks, developing sound plans and programs, and assuring these are consistently implemented. Unit surgeons, preventive medicine sections, and all medical personnel serving in an advisory capacity to Army units must take a proactive role in assuring that our leaders know about and support efforts to prevent cold weather injuries. Provider reporting of CWIs is crucial for the assessment of prevention programs. A copy of the Reportable Events Worksheet is included at the end of this publication.

So What's the Big Deal?
Cold weather injuries have had tremendous impact on military campaigns and operations. Over 8,000 occurred in troops during the first year of the Korean War; proper protective measures decreased the numbers eight-fold the next year. Of the over 80 active duty soldiers who suffered CWIs during 2002, 18 were troops assigned to Korea. No location is immune; two

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Korean Hemorrhagic Fever

What is Korean Hemorrhagic Fever?

Korean Hemorrhagic Fever (KHF) is a viral illness spread through the aerosolization of the urine and saliva of infected rats and mice. Humans can contract the disease if they inhale dust contaminated with infected rodent urine. Most USFK personnel who get this disease get it while training in the field.

Consequently, Preventive Medicine assets conduct rodent surveillance in these training areas to determine the infection rates of the rodents. Typically, infection rates range from <10% to >60%. The highest rates usually occur in the fall and winter seasons. Over the past year, two cases were reported for Warrior Base. Of the sites surveyed, Dagmar North, LTA 130 and FP 131 typically have the highest infection rates.

The disease is not spread from person to person. But because it is caused by a virus, there are no specific medications to treat the disease—just supportive therapy. Ribavirin is an 'experimental use' drug that is offered to soldiers that develop KHF. However, it appears to have little benefit if not given within 6-8 days after initial symptoms develop.

There's good news and bad news about this disease. The bad news is

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An example of skin changes that occur with severe frostbite

Cold Weather Injuries

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CWIs occurred in troops treated at Tripler Army Medical Center in Hawaii.

All patients suspected of having sustained a CWI should be reevaluated 48-72 hours after the injury. When possible, this should be done by preventive medicine staff in order to ensure proper profiling and injury evaluation.

Cold weather injuries occur in a spectrum from non-freezing to freezing injuries and then to general hypothermia. Following is a quick summary of the CWI spectrum and treatment. Further information and PowerPoint CWI presentations can be obtained at the USACHPPM Main website: http://chppm-www.apgea.army.mil/

"No location is immune to CWIs; two CWIs occurred in troops treated at Tripler Army Medical Center in Hawaii."

Non Freezing Injuries

Chillblain

- Appear as swollen, tender, erythematous papules with desquamation and bleeding
- Complaint of pruritus, burning or prickly sensation
- Mostly females
- Treatment options: Ideally, passive warming at room temp without rubbing or massage. Affected areas should be protected from trauma and secondary infection. Topical steroids may help, while Prazosin 1 mg daily may prevent reoccurrence.

Trench/Immersion foot

- Due to prolonged contact with moisture at temps between 32-50 degrees F
- **First Phase**: feet appear pale, waxy, mottled, pulseless, anesthetic and immobile
- **Second Phase**: hyperemia after re-warming for 1-2 days with severe, burning pain

******Only diagnose when these signs **do not change after initial warming****

NOTE: Moderate to severe trench/immersion foot may present with edema, hyperemia, bullae and mottling; gangrene may develop, leading to loss of deep and superficial tissue. This can permanently disable and prevent RTD!

Freezing Injuries

Note: Classification is based on the clinical appearance 2-3 days after injury.

Frostnip (AKA first degree frostbite)

- The most superficial form resulting in pale or red appearance, mild swelling, edema, & paresthesias in affected parts. Symptoms resolve in hours to days without sequelae or treatment.

Frostbite (True freezing injury of tissues)

- **Minimal**: hyperemia and slight sensory changes. No objective findings.
- **Mild**: edema, hyperemia, and clear sensory changes. No bullae or skin loss.
- **Moderate-Severe**: bullae and tissue necrosis develop.

Keys to treatment include re-warming **WITHOUT** re-freezing. Massaging or rubbing affected areas will cause more tissue damage. If re-warming cannot be maintained (i.e., at field sties), it is generally better to NOT attempt re-warming. Partial thawing with re-freezing only extends the tissue damage. Concomitant evaluation for hypothermia and dehydration is also indicated.

Hypothermia

Mild (Core temp 90 to 95F)

Symptoms include shivering, dysarthria, and mild ataxia with concomitant personality changes: neurosis, apathy, moodiness. Skin is pale and cold. The person may complain of hunger, nausea, and/or fatigue; however, these symptoms resolve with re-warming, and the person can usually resume activities if he will be well insulated and hydrated.

Moderate-Severe (Core temp <90F)

This degree of hypothermia is a **MEDICAL EMERGENCY!** Symptoms include more severe mental status changes (stuporous to unconscious); the loss of the shivering reflex; and even arrythmias such as atrial fibrillation or severe bradycardia. Opiate effects (dilated pupils, bradypnea, hypotension) are also seen. Therefore, treatment with Naloxone may be of benefit.

Keys to treatment include **GENTLE** handling and immobilization to reduce risk of triggering ventricular fibrillation; warm rehydration but **NO LR** or other lactate-containing solutions as a cold liver cannot metabolize lactate. Evaluation and treatment for hypoglycemia may be indicated. Of note, patients with significant hypothermia must be transported **prior to** warming attempts.

MRSA in USFK

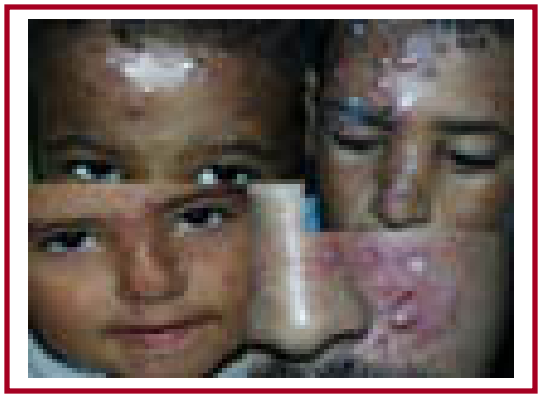
Methicillin-resistant staphylococcus aureus (MRSA) can cause skin diseases such as impetigo, folliculitis, furuncles, carbuncles, abscesses and infected lacerations. In the past, MRSA was usually seen in hospitalized patients. However, increasing percentages of persons in the community are becoming infected with these bacteria (*MMWR CDC Surveilance Summary* 2003;52:793-795).

This past summer, soldiers at Camp Garry Owen suffered severe folliculitis with large ulcers that grew MRSA. Their course either did not respond to initial antibiotic treatment or recurred multiple times. Four affected soldiers lived in the same barracks and worked out in the same gym. Even though the gym was clean upon inspection, sharing of the gym equipment was thought to be the mechanism of transmission. Frequent wiping down of the equipment with effective disinfectant was instituted.

MRSA infections occur more often in environments where personal hygiene is suboptimal. Transmission occurs due to open draining lesions or purulent discharge. To prevent MRSA, emphasize frequent hand washing with soap and water, especially when in the field environment. Instruct soldiers to cover all wounds effectively. Perhaps overemphasized in the past, sharing of toilet articles is still to be discouraged.

Treatment includes performing local skin cleaning and obtaining wound cultures to guide what antibiotic to use. In outbreaks, providers should search for and treat those with clinical illness, especially with draining lesions. Cultures should be performed for nasal carriers of the epidemic strain. Of the general population, 20-30% is colonized with S. Aureus in the anterior nares. Even after treatment, patients may become re-colonized in 3-4 months.

Multiple scattered pustules on lower extremity in folliculitis caused by S. Aureus



Scattered pustules and nodules caused by S. Aureus

"Of the general population, 20-30% is colonized with S. Aureus in the anterior nares."

Korean Hemorrhagic Fever

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"The bad news is that 1 in 10 USFK persons who get KHF die.'

that 1 in 10 USFK persons who get this disease die. The good news is that since 1986, on average, only 3 USFK persons a year get the disease. This is due to the limited use of those training sites during the peak transmission season.

What causes KHF?

KHF is caused by a virus. There are two forms. When people hear about this disease, they often think of the severe disease caused by the more aggressive virus, the 'Hantaan virus.' A less severe form of KHF is spread by Norway rats. This form is called 'Seoul virus.' This often goes undiagnosed because its symptoms are mild and very much like the 'flu.'

"The less severe form of KHF often goes undiagnosed because its symptoms are mild and very much like the 'flu.'"

What are the symptoms of KHF?

There are five phases to the disease: fever (3-7 days), low blood pressure (1-3 days), loss of urine output (3-7 days), excessive urine output (which signals recovery), and convalescence (weeks to months).

Unfortunately, this disease is often misdiagnosed in the early states, as symptoms are very non-specific. Delayed diagnosis can limit the potential efficacy of ribavirin. Therefore, it is important for providers to be aware of this illness and to consider it in the differential diagnosis of febrile patients with recent field exposure. Serologic testing is available through the 121 Pathology Department.

For Commanders: How to Prevent KHF During Field Training

- **Rodent proof food, waste, and rubbish**
- **No food storage outside of mess facility**
- **Clear brush around bivouac site to include 20 meter outside perimeter**
- **Raised platforms for semi-permanent tents (18")**
- **Remove wastes > 1 km from site**
- **Personal hygiene (hand washing)**
- **Prompt cleaning of soiled clothing**
- **Wet-down roadways and helicopter landing sites when possible**
- **Prohibit use of vegetation for camouflage**
- **Do not use bivouac sites where previous cases occurred**

18th MEDCOM Reportable Events Program

Selected Reportable Events Incidence Summary

OCT 2003

Reportable Condition	Area I	Area II	Area III	Area IV	Totals
Trichomonas	0	0	0	0	0
Chlamydia	14	19	2	0	35
Herpes simplex	0	0	0	0	0
Gonorrhea	4	1	0	1	6
Syphillis	0	0	0	0	0
NGU	1	0	0	0	1
HIV	0	0	0	0	0
STD Totals	19	20	2	1	42
Tuberculosis (active disease)	0	0	0	0	0
Tuberculosis (recent converter)	8	3	6	0	17
Heat Injury	0	0	0	0	0
Cold Injury	0	0	0	0	0
Malaria	2	0	0	0	2

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We're on the Web!

See us on the 18th MEDCOM Homepage!

Upcoming Events

Tobacco Cessation

AREA I
CRC: Dec 9 and Jan 6, 13 at 1000
Camp Casey: Dec 17 and Jan 7, 14 at 0900
For more information, contact Mr. Cobb @ 730-3542.

AREA II
Yongsan: Dec 4, 8, 11, 18 and Jan 7, 8, 12, 15 @1530-1630 in Bldg 5447
For more information, contact Ms. Suh @ 736-3029.

AREA IV
Camp Carroll: Every Mon at 1300 in ACS BLDG
Camp Walker: Every Wed at 1400 in TMC
Camp Hialeah: Third Thurs of each month at 1300 in TMC
For more information, contact Ms. Knighton @ 764-5213.

Field Sanitation Team Training

12-16 January (Yongsan)
23-27 February (CRC)
38th PM Detachment
Reserve slots for your unit now. For more information, call DSN 724-6276.

23-27 February (Yongsan)
22-27 March (Camp Eagle)
5th PM Detachment
Reserve slots for your unit now. For more information, call DSN 725-4919.

8-12 March (Camp Walker, Bldg 328)
154th PM Detachment
Reserve slots for your unit now. For more information, call SSG Phillips at 764-5024.

About Our Organization...

The mission of the 18th MEDCOM Preventive Services Directorate is to perform the following: maintain oversight of a comprehensive Preventive Medicine Program; promote and maintain the fighting force at maximum effective strength; maintain the physical well being of all personnel; and establish practical measures for the preservation and promotion of health and the prevention of disease and injury.